



EXHIBIT A

ANTHONY HENRY DICKENSON

PROFESSOR OF NEUROPHARMACOLOGY

DATE OF BIRTH	5 October 1952 Manchester UK
MARITAL STATUS	Married 1975, Two daughters (1989, 1993)
SCHOOL ATTENDED	St Mary's College, Southampton. 1963-1970 11 GCE O Level subjects, 3 GCE A-Levels
UNIVERSITY ATTENDED	University of Reading. 1971-1974 2:1 (Hons) Physiology & Biochemistry, Chemistry and Zoology subsidiary subjects
POSTGRADUATE DEGREE	MRC Studentship. 1974-1977 Neurophysiology & Neuropharmacology, National Institute for Medical Research, London NW7 1AA A role for serotonergic neurones in temperature regulation PhD September 1977
PROFESSIONAL HISTORY	
Wellcome Trust Fellowship	National Institute for Medical Research, Sept 1977 - Jan 1978.
MRC-INSERM Fellowship	Unite de Recherches de Neurophysiologie Pharmacologique. Paris, Jan 1978 - Feb 1979.
Scientific Staff	National Institute for Medical Research, Mill Hill, London, Feb 1979 - Aug 1983.
European Science Foundation Fellow	University of Lund, Sweden, Apr-June 1982 & 1983.
Visiting Associate Professor	University of California, Berkeley, July - Sept 1986.
Lecturer	Dept of Pharmacology, University College London, Sept 1983.
Senior Lecturer	Dept of Pharmacology, University College London, 1990
Reader in Neuropharmacology	Dept of Pharmacology, University College London, 1992
Professor of Neuropharmacology	Dept of Pharmacology, University College London, 1995

APPOINTMENTS & AWARDS

Professional bodies

Council member, International Association for the Study of Pain 1996-2002, Media Resource Service, CIBA Foundation 1982-, INSERM (French MRC) Scientific Commission 1990-, British Opioid Colloquium National

Committee 1991-1997, Medical Research Council Postgraduate Studentship Assessment Committee 1991-4, Brain Research Association National Committee 1992-1994, International Association for the Study of Pain, Scientific Commission 1993-1996, The Pain Society, UK IASP Chapter, Executive Committee 1993-2004, Editorial Board, Associate Editor (Pharmacology), Pain, 1993-, Editorial Board, British Journal of Pharmacology, 1994-1996, Section editor, Pain Medicine Journal club Journal, 1994, Science Line, 1994-

Other

Co-founder (with CJ Woolf & MF Fitzgerald) of the Thomas Lewis Pain Centre, UCL, 1993

Medal and Annual Lecture in Neuroscience, University of Pavia, Italy, 1993

Royal Society of Medicine Visiting Professor, USA 1995

External Examiner, BMSP, Kings College London, 1995-2000

First Patrick Wall Lecture, Royal College of Anaesthetists, 2005

Membership of Societies

The Physiological Society, British Pharmacological Society, International Association for the Study of Pain, Brain Research Association, British Society for Psychopharmacology, European Neuroscience Association, International Brain Research Organization

RESEARCH GRANTS

Medical Research Council, Wellcome Trust, Intractable Pain Society, EEC, BIOMED 1 Mobility Grant, EEC, BIOMED, Centre for Applied Microbiology. European Community, Biomed II, Glaxo-Wellcome, Merck, Abbott, Wyeth, Pfizer. Projects and programme – total over £5million.

London Pain Consortium. – Integrative Physiology Initiative 2002-2007 £5.5million (with McMahon, Wood, Hunt, Fitzgerald and 3 others)

Collaborative Research

INSERM 266, Universite Rene Descartes, Paris, France, Institute of Child Health, Great Ormond St. Hospital, Oxford Pain Relief Unit, Abingdon, UK, Intensive Care Unit, University College Hospital UK, School of Public Health, University of California, Berkeley USA, Dept. of Pharmacology, University of Bordeaux, France, University of Helsinki Hospital, Edendale Hospice & RFHMS, EEC Biomed (Karolinska, Sweden)

London Pain Consortium, University of Tucson Arizona, Human Imaging Group, Oxford UK, University of Bergen. Norway

ACADEMIC & TEACHING EXPERIENCE

Undergraduate

Course tutor, lectures: Drugs and the Mind B13 (Yr2)

Course tutor, lectures and practicals Neuropharmacology C3/C13 (Yr3)

Lectures, practicals and tutorials: Basic and Systematic Pharmacology (Yr2)

Project supervisor, Practical Pharmacology (Yr2)

Lectures, practicals, reading projects, follow-ups and tutorials (BMS 2)

Lectures, Neurobiology Course (BMS 2).

Lectures, tutorials, Pain C42 (Yr3).

Lectures, Neurobiology of Behaviour C50 (Yr3).

Personal tutor to medical and science students.
Lectures, RCA revision course.
Projects for Pharmacology, Biology and Human Sciences (Yr3)
Lectures, Natural Sciences, Cambridge (Yr2)
Lectures, Intercollegiate Immunopharmacology Course (Yr3)

MEDIA - interviews and articles

CIBA Media Resource Service, National Science Line, Observer, Times, Telegraph, Independent, Fitness and Health, Radio 4, Radio 5, LBC, Channel 4, Radio Suisse, Vogue, Big Issue, New Scientist, MixMag, Radio 2, Radio 1, BBC World Service, BBC1, Channel 4, Camden Journal, Channel 5, Guardian, BBC Radio Wales, Royal Institution, Radio Ireland talk News.

SELECTED FULL REFEREED PAPERS & ARTICLES SINCE 1977

1. A.H.DICKENSON: Specific responses of rat raphe neurones to skin temperature changes. *J. Physiol* (1977) 273, 277-293.
2. A.H. DICKENSON: Serotonergic raphe neurones involved in an ascending thermal pathway. In: *New Trends in Thermal Physiology* (eds Y. Houdas and J.D. Guieu) Masson & Co (Paris) 1978 pp 50-52.
3. A.H. DICKENSON, R.F. HELLON & D.C.M. TAYLOR: Facial thermal input to the trigeminal spinal nucleus of rabbits and rats. *J. Comp. Neurol* (1979) 185, 203-210.
4. A.H. DICKENSON, J.L. OLIVERAS & J.M. BESSON: Role of the nucleus raphe magnus in opiate analgesia as studied by the microinjection technique in the rat. *Brain. Res.* (1979) 170,95-111.
5. A.H. DICKENSON, V. FARDIN, D. LE BARS & J.M. BESSON: Antinociceptive action following microinjections of methionine-enkephalin in the nucleus raphe magnus of the rat. *Neurosci. Letts.* (1979) 15, 265-270.
6. A.H.DICKENSON, D. LE BARS & J.M. BESSON: Diffuse Noxious Inhibitory Controls (DNIC). Effects on trigeminal nucleus caudalis neurones in the rat. *Brain Res.* (1980) 200, 293-306.
7. A.H. DICKENSON, R.F. HELLON & C.J. WOOLF: Tooth pulp input to the spinal trigeminal nucleus: a comparison of inhibitions following segmental and raphe magnus stimulation. *Brain Res.* (1981) 214, 73-87.
8. D. LE BARS, D. CHITOUR, E. KRAUS, A. CLOT, A.H. DICKENSON & J.M. BESSON: The effect of systemic morphine upon Diffuse Noxious Inhibitory Controls in the rat: evidence for a lifting of certain descending inhibitory controls of dorsal horn convergent neurones. *Brain Res.* (1981) 215, 257-274.
9. A.H. DICKENSON, D. LE BARS & J.M. BESSON: Endogenous opiates and nociception: a possible functional role in both pain inhibition and detection as revealed by intrathecal naloxone. *Neurosci. Letts.* (1981) 24, 161-164.
10. A.H. DICKENSON & D. LE BARS: Diffuse Noxious Inhibitory Controls involve trigemino - and spinothalamic convergent neurones in the rat. *Exp. Brain Res.* (1982) 174-180

11. A.H.DICKENSON. Topical application of glutamate and substance P onto trigeminal nucleus caudalis produces dorsal horn neuronal inhibitions in the rat. *Proc.Royal. Soc. Lond. B* (1985) 308, 212.
12. A.H. DICKENSON & A.F. SULLIVAN. Electrophysiological studies on the effects on intrathecal morphine on nociceptive neurones in the rat dorsal horn. *Pain* (1986) 24, 211-222.
13. A.H. DICKENSON, A. SULLIVAN, R. KNOX, B.P ROQUES & J.ZAJAC. Opioid receptor subtypes in the rat spinal cord: electrophysiological evidence for a role of mu and delta opioid receptor agonists in the control of nociception. *Brain Res.* (1987) 413, 46-44.
14. A.H. DICKENSON. A new approach to pain relief? *Nature* (1986) 320, 681-108.
15. A.H. DICKENSON. Some views on the influence of morphine on brain stem pain modulating neurones and descending controls acting on the spinal cord. *Progress in Brain Research* (1988) Elsevier, Amsterdam pp 261-265.
16. J.E.HALEY, A.H. DICKENSON & M. SCHACHTER. Electrophysiological evidence for a role of bradykinin in chemical nociception in the rat. *Neurosci Letts* (1989) 97, 198-202.
17. A.H. DICKENSON & A.F. SULLIVAN Differential effects of excitatory amino acid antagonists on dorsal horn nociceptive neurones in the rat. *Brain Res.* (1990) 506, 31-39.
18. A.H. DICKENSON. Mechanisms of the analgesic actions of opiates and opioids, *British Medical Bulletin* (1991) 47, 690-702.
19. A. H. DICKENSON. Recent advances in the physiology and pharmacology of pain: plasticity and its implications for clinical analgesia. *J. Psychopharm.* (1991) 5, 342-351.
20. H.FRASER, Y. CHAPMAN & A.H. DICKENSON. Spinal local anaesthetic actions on afferent evoked responses and wind up of nociceptive neurones in the rat spinal cord: combination with morphine produces marked potentiation of antinociception. *Pain.* (1992) 49, 33-41.
21. A.H. DICKENSON, Neurophysiology of opioid poorly-responsive pain, *Cancer Surveys* (1994), 21,5-16.
22. A. DRAY, L. URBAN & AH. DICKENSON, *Pharmacology of Chronic Pain.* *Trends in Pharm. Sci.*, (1994) 15, 190-197.
23. A.H. DICKENSON, Novel Pharmacological targets in the treatment of Pain. *Pain Reviews* (1995) 2, 1-12.
24. A.H. DICKENSON, Spinal cord pharmacology of pain. *British J. Anaesthesia*, (1995) 75, 193-200.
25. M.J. PARNHAM & A.H. DICKENSON. Developments and clinical leads in nonopioid analgesics. *Analgesia* (1996) 2, 43-56.
26. AH DICKENSON. GABA and persistent pain, *Dolor* (1997), 12, 10-11.
27. V. CHAPMAN, R.SUZUKI & AH. DICKENSON. Electrophysiological characterisation of spinal neuronal response properties in anaesthetized rats after ligation of spinal nerves L5-L6 *J. Physiol* (1998) 507, 881-894.
28. AH DICKENSON & H.MCQUAY 25 years of advances in pain research *IASP Newsletter* (1999)

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29. LJ RYGH, M GREEN, N ATHAUDA, A TJOLSEN & AH DICKENSON. The effect of spinal morphine following long-term potentiation of wide dynamic range neurones in the rat. *Anesthesiology* (2000) 92: 140-146
30. KJ CARPENTER, AH DICKENSON. Amino acids are still as exciting as ever. *Curr Opin Pharmacol* 2001; 1: 57-61
31. R SUZUKI, L STANFA, E KOWALUK, M. WILLIAMS M JARVIS DICKENSON AH. The effect of ABT-702, a novel adenosine kinase inhibitor, on the responses of spinal neurons following carrageenan inflammation and peripheral nerve injury. *Br. J. Pharmacol.* 2001; 132: 1615-1623.
32. KC CARPENTER & AH DICKENSON. Molecular aspects of pain. *Pharmacogenetics Journal* 2002 2: 87-95.
33. S. FLATTERS, A FOX & AH DICKENSON In vivo and in vitro effects of peripheral galanin on nociceptive transmission in naive and neuropathic states. *Neuroscience* 2003; 116: 1005-1012.
34. SJL. FLATTERS, A FOX & AH. DICKENSON Spinal interleukin-6 (IL-6) inhibits nociceptive transmission following neuropathy. *Brain Res*; 2003, 984, 54-62
35. E.A. MATTHEWS, A.H. DICKENSON Spinal effects of adenine in rat spinal cord. *Neurosci Lett.* 2004; 356:211-4.
36. STANFA LC, DICKENSON AH. In vivo electrophysiology of dorsal-horn neurons. *Methods Mol Med.* 2004; 99:139-53.
37. HANSSON PT, DICKENSON AH. Pharmacological treatment of peripheral neuropathic pain conditions based on shared commonalities despite multiple etiologies. *Pain.* 2005;113: 251-254.
38. R SUZUKI AND AH DICKENSON Opioids in neuropathic pain: clues from animal studies. *Eur J Pain* 2005; 9:113-116.
39. SUZUKI R, RAHMAN W, RYGH LJ, WEBBER M, HUNT SP AND DICKENSON AH. Spinal-supraspinal serotonergic circuits regulating neuropathic pain and its treatment with gabapentin. *Pain* (2005) in press
40. Urch CE, Donovan-Rodriguez T, Gordon-Williams R, Bee L, Dickenson AH. The efficacy of chronic morphine in a rat model of cancer-induced bone pain: behaviour and in dorsal horn pathophysiology. *Journal of Pain* (2005) in press